M A R W A N M . A L R A G G A D

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Amman 11942 Jordan

Summary

- Professional experience in Hydrological, topological modeling and water management.
- Expert in geographic information systems.
- Solid and applied experience in groundwater investigations, monitoring and management .
- Excellent field and in class training capacity.

Professional Experience

Executive Director: **Jan 2019 – recent.**

INWRDAM Inter-Islamic Network on Water Resources Development and Management

http://inwrdam.org.jo

Associate professor and researcher: **May 2010 – recent.**

Water, Energy and Environment Center, University of Jordan.

- Researcher responsible about conducting research in Hydrogeology, IWRM, water use optimization.
- Lecturer in graduate studies programs: Groundwater management, on farm groundwater, Climate change impact and adaptation, WEF Nexux

Water basin field manager, geologist: **Apr 2008 – Apr 2010.**

Water Authority of Jordan, Jordan valley, Jordan.

- Managing the groundwater basins in the Jordan valley on quality and quantity basis, well use and cropping type, conduct analysis of crop water requirements and water budget for irrigation use.

Hydrogeologist: **Mar 2007 – Apr 2008**

Water Authority of Jordan, Groundwater basins monitoring sector, Amman, Jordan.

- Senior geologist responsible about supervision of GIS investigations for groundwater wells, land use and crop types mapping and groundwater use in agriculture.

Hydrogeologist: **Oct 2005 – Nov 2006**

USAID/ARD, GMED project, Amman, Jordan.

- Groundwater management, enforcement of groundwater control by law and groundwater use monitoring.

Teacher assistant (Part time) **Oct 2006 – Nov 2009**

University of Jordan, Department of environmental geology, Amman, Jordan.

- Field hydrologist providing assistance to professors in the field work, sampling, mapping and laboratory work .

Researcher (Part time) **Jan 2007 – Nov 2009**
University of Jordan and German Federal Ministry of Education and Research.

- Field and GIS hydrogeologist providing data control and GIS mapping and assistance in SMART and SUMAR projects funded by BMBF Germany.

Environmental hydrogeologist **Jan 2002 – Jul 2004**
Ministry of environment and UNEP, Amman Jordan.

- Researcher in Persistent Organic Pollutants project (POPs) responsible about EIA of pesticides use in Jordan.

Education

B.Sc, Applied and environmental geology (1998-2002)
M.Sc, Hydrogeology (2002-2005): Groundwater resources evaluation.
P.hD, Hydrogeology and GIS (2005 – 2009):GIS based groundwater flow modeling and hydrogeochemical assessment of the northern part of the Dead Sea groundwater basin.
Post. Doc: 2017 for associate professorship in Groundwater modeling and climate change, UFZ Germany.

Training

Swedish Meteorological and Hydrological Institute, Sweden 25th-Oct–19th–Nov 2010

Climate change impacts, mitigation and adaptations in food, water energy nexus.

Helmholtz-Center for Environmental Research, Germany 14th-Aug– 2th Sep 2008

Geological and numerical modeling, Aquifer hydraulics, well testing, Groundwater recharge and GIS.

USAID/ARD (On job training) **Nov 2005 - Aug 2006**

Groundwater resources management, Groundwater data collection and quality control, calculation of crop water requirements for estimation of groundwater pumping.

Specific computer skills

- Professional GIS user with solid skills in Archydro, Arc SWAT, spatial analyst, remote sensing and high resolution topographic modeling.
- Groundwater modeling and recharge calculation.

International research projects

- **Project Leader**: Modeling of transboundary groundwater flow in the Yarmouk basin (UFZ Germany 2012 – 2019).
- **Project leader**: Pollutants of emerging concerns fate during treated waste water reuse in agriculture in the Zarqa basin (DFG, Germany 2013 – 2018).

- **Project Leader**: Conjunctive use of groundwater and treated waste water in agriculture. (USAID 2012-2015).
- **Project Leader**: Managed Aquifer Recharge using treated waste water in different geological setting in MENA countries (USAID 2013-2016).
- **Project coordinator**: CNRD project (Center of Natural Resources and Development), 14 international countries (DAAD / BMBF Germany 2015 – 2019), Team leader of Geology working group.
- **Project leader**: WEF NEXUS in Jordan, Ethiopia and Sudan (Cologne university for applied sciences, Germany 2014 – 2016).
- **Senior Hydrogeologist**: Sustainable management of water resources in the Dead Sea area (BMBF Germany 2011-2013)
- **Senior Hydrogeologist**: geological mapping and groundwater drilling for artificial recharge in the Jordan Valley (BMZ, Germany 2012).

Most recent consultancy work:

ICBA **May. 2018 – Dec. 2018**
Support ICBA and WIT team (Water Innovative Technologies project/ Jordan) in defining sub-localities of priority intervention that the project should target in order to achieve the highest impact on saving water while sustaining crop productivity.

Mercy corps **Jan. 2013 – Apr. 2017**
Senior geologist , groundwater development expert in Zatari, Azraq camps.
Hyrogeological studies for different areas including environmental impacts of refugees camps.

Dorsch International consultants (KFW) **Mar. 2013 – Mar. 2015**
Senior Hydro geologist , Immediate Measures for Improvement of Water Supply in Northern Jordan directed to Syrian Refugees project North Jordan: Geological invistigations, Well drilling, Well development, Well rehabilitation, Quality testing, work (total of 45 wells)

UNHCR: **Jan. – May 2014**
Hydrogeological and geological investigations of east Jordan's transboundary basins.

UNICEF: **July – Dec. 2013**
Zatari refugees camp vulnerability assessment and environmental impacts

Scientific research and papers.

- Supervisor of 24 local and international master students (2011 – 2018) in groundwater management, hydrology, GIS tools, EIA, flood management, water quality and climate change studies.

Scientific Publications

1. Springer book: Salameh, Elias, Musa Shteiwi, and Marwan Al Raggad. Water Resources of Jordan: Political, Social and Economic Implications of Scarce Water Resources. Vol. 1. Springer, 2018.
2. Hydrogeochemical prospecting for evaporate and clay deposits in Harrat ash Shaam basalts, Jordan. Journal of Geochemical Exploration 2017
3. Al-Raggad M., Salameh E., Magri F., Möller P., Al-Shdaifat A. 2017: Groundwater salinization through upward percolation from a deeper aquifer: North Jordan, Journal of water resources and protection.
4. Marwan Mohammad Al-Raggad, Elias Michael Salameh , Cristina Riemenschneider , Ahmad Ibrahim Al-Shdaifat , Hani Rizg Allah Al-Amoush , Mohammad Abdul Hafiz Wraikat 2016: 30 Years of Secondary Treated Wastewater discharge Influence on Zarqa River - Jordan: A new GIS approach in Groundwater Ecosystem Resilience Assessment, Journal of environmental protection.
5. Rödiger, T., Magri, F., Geyer, S., Morandage, S. T., Subah, H. A., Alraggad, M., & Siebert, C. (2017). Assessing anthropogenic impacts on limited water resources under semi-arid conditions: three-dimensional transient regional modelling in Jordan. *Hydrogeology Journal*, 1-11.
6. Alraggad, Marwan, Bart Johnsen-Harris, Ahmad Shdaifat, and Arwa Hamaideh. "Groundwater resilience to climate change in the eastern Dead Sea basin Jordan." *Scientific Research and Essays* 12, no. 3 (2017): 24-41.
7. Kenkmann, T., Sturm, S., Krüger, T., Salameh, E., Al-Raggad, M., & Konsul, K. (2017). The structural inventory of a small complex impact crater: Jebel Waqf as Suwwan, Jordan. *Meteoritics & Planetary Science*.
8. Hamaideh, A., Hoetzl, H., & Al Raggad, M. (2017). Water harvesting: Groundwater storage reservoir in Wadi Ishe, Jordan. *Scientific Research and Essays*, *12*(2), 9-23.
9. Riemenschneider, C., Al-Raggad, M., Moeder, M., Seiwert, B., Salameh, E., & Reemtsma, T. (2016). Pharmaceuticals, their metabolites, and other polar pollutants in field-grown vegetables irrigated with treated municipal wastewater. *Journal of agricultural and food chemistry*, *64*(29), 5784-5792.
10. Al-Assaf, Amani A., Yolla Y. Al-Asmar, Bart D. Johnsen-Harris, and Marwan M. Al-Raggad. "Spatial mapping of the social value of forest services: A case study of northern Jordan." *Journal of Sustainable Forestry* 35, no. 7 (2016): 469-485.
11. The structural inventory of a small complex crater: Jabel Waqf as Suwwan, Jordan. Meteoritics & planetary science 11/2016;, DOI:10.1111/maps.12923
12. Spatial Mapping of the Social Value of Forest Services: A Case Study of Northern Jordan. Journal of Sustainable Forestry 08/2016;, DOI:10.1080/10549811.2016.1212381

13. Conjunctive use of groundwater and surface water resources with aquifer recharge by treated wastewater: evaluation of management scenarios in the Zarqa River Basin, Jordan. Environmental Earth Sciences 08/2016; 75(15)., DOI:10.1007/s12665-016-5946-1
14. Pharmaceuticals, Their Metabolites, and Other Polar Pollutants in Field-Grown Vegetables Irrigated with Treated Municipal Wastewater. Journal of Agricultural and Food Chemistry 07/2016; 64(29)., DOI:10.1021/acs.jafc.6b01696
15. Origin of high bromide concentration in the water sources in Jordan and in the Dead Sea water. Arabian Journal of Geosciences 05/2016; 9(5)., DOI:10.1007/s12517-016-2431-9
16. Disi Water Use for Irrigation - a False Decision and Its Consequences. CLEAN - Soil Air Water 05/2014; 42(12)., DOI:10.1002/clen.201300647
17. Natural salinity sources in the groundwaters of Jordan—Importance of sustainable aquifer management. Chemie der Erde - Geochemistry 05/2014; 74(4)., DOI:10.1016/j.chemer.2014.04.007
18. Challenges to estimate surface- and groundwater flow in arid regions: The Dead Sea catchment. Science of The Total Environment 04/2014; 485(1)., DOI:10.1016/j.scitotenv.2014.04.010
19. Groundwater recharge zones mapping using GIS: A case study in Southern part of Jordan Valley, Jordan. Arabian Journal of Geosciences 07/2013; 7(7)., DOI:10.1007/s12517-013-0995-1
20. Application of the water balance model J2000 to estimate groundwater recharge in a semi-arid environment: A case study in the Zarqa River catchment, NW-Jordan. Environmental Earth Sciences 05/2013; 69(2)., DOI:10.1007/s12665-013-2342-y
21. Modelling the water balance of the Eastern catchment of the Dead Sea under data scarcity.
22. Marwan Alraggad, Sahar Al-Saleh, Hani Al-Amoush, Alsharifa Hind Jasem, Dawoud Isied: Vulnerability of Groundwater System in Central Jordan Valley/Pollution Indicators and Decontamination Process. Journal of Water Resource and Protection 01/2012; 04(03)., DOI:10.4236/jwarp.2012.43016
23. Hydro-Geoelectrical Investigation for the Potential of Underground Water Storage along the Lower Reaches of King Abdullah Canal—Deir Alla Area/Jordan. Journal of Water Resource and Protection 01/2012; 04(07)., DOI:10.4236/jwarp.2012.47064
24. The Fate of Disi Aquifer as Stratigic Groundwater Reserve for Shared Countries (Jordan and Saudi Arabia). Journal of Water Resource and Protection 01/2011; 03(10)., DOI:10.4236/jwarp.2011.310081
25. Managed Aquifer Recharge (MAR) through Surface Infiltration in the Azraq Basin/Jordan. Journal of Water Resource and Protection 01/2010; 02(12)., DOI:10.4236/jwarp.2010.212125
26. Assessing Groundwater Vulnerability in Azraq Basin Area by a Modified DRASTIC Index.

Conference Proceedings

1. Raggad, Marwan Al, et al. "Groundwater recharge variation under climatic variability in Ajlun area and the recharge zone of Wadi Arab well field-Jordan". EGU General Assembly Conference Abstracts (Vol. 19, p. 18812).

2. Raggad, Marwan Al, et al. "Processes of mineralization in the Hauran Basin (Syria and Jordan) and in adjoining areas." EGU General Assembly Conference Abstracts. Vol. 19. 2017.
3. Koltzer, Nora, et al. "Thermal impacts of magmatic intrusions on dolomitization processes in the Tiberias Basin, Jordan-Dead Sea Transform." EGU General Assembly Conference Abstracts. Vol. 19. 2017.
4. Tzoufka, Kalliopi, et al. "Numerical simulations of the impact of hydraulic anisotropy and anthropogenic activities on the complex hydrogeological system of the Lower Yarmouk Gorge." *EGU General Assembly Conference Abstracts*. Vol. 19. 2017.
5. Magri, Fabien, et al. "3D hydrogeological model of the Lower Yarmouk Gorge, Jordan Rift Valley." *EGU General Assembly Conference Abstracts*. Vol. 19. 2017.
6. Evaluation of Managed Aquifer Recharge Scenarios using Treated Wastewater: a Case study of the Zarqa River Basin, Jordan. European Geosciences Union General Assembly 2016; 04/2016
7. Groundwater recharge in a semi-arid environment under high climatic variability and over-pumping: Ajlun Highlands example, Jordan. European Geosciences Union General Assembly 2016; 04/2016
8. The Tectonic Inventory Of Small Complex Impact Structures: A Case Study At Jebel Waqf As Suwwan, Jordan.. 47th Lpsc; 01/2016
9. Assessment of groundwater dynamics by applying rare earth elements and stable isotopes & ndash; the case of the Tiberias Basin, Jordan Valley.. EGU General Assembly Conference 2015, Vienna; 04/2015
10. Structural control on the evolution of groundwater quality for B2A7 aquifer in the area extending from Ajlun to Yarmouk river in Jordan. EGU General Assembly 2015, Vienna; 04/2015
11. Water Resources and Security under the Stress of Climate Change in the Middle East. The Impact of Climate Change on the Middle East— Converging and Diverging Perceptions of Development and Human Security; 11/2010

Personal information

D.O.B: Dec, 10th 1979.
Marital Status: Married.
Nationality: Jordanian.